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Ethnobotanical Studies of Chittapur Taluk in Kalaburgi, Karnataka-India

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Abstract

The present Ethno-botanical study was conducted in Chitapur Taluk of Kalaburgi district to document Traditional medicinal Plants used by local Vaidiyas. Study revealed 25 plants species belonging to 14 families and 24 genera. The information gathered indicates that the tribals, and common people of the study area possess good knowledge about herbals and remedies. Diseases/ailments found prevalent in the area are renal calculus, snake bite, fits, hepatitis, tooth ache and menstrual disorders. Data includes botanical name, vernacular name, family, plant part used, dosage, method of application. The continuous and progressive exposure to modernization of traditional practitioners may result in the extinction of such rich heritage of traditional knowledge in the course of time. Further, suggested to validate for remedial plant metabolites for novel drug development for treatment of such disorder.

Keywords: Traditional medicinal plants; Chitapur; Diseases; Vaidiyas; Healthcare

1. Introduction

"Ethnobotany is the discipline concerned with the interactions between people and plants" (1). Plants have always been a major component of the traditional system of curing the diseases in developing countries, and have also been an essential part of the history and cultural practices of local communities [2].

Nature has been a source of medicinal plants for since civilization. An impressive number of modern drugs have been isolated from natural sources. Medicinal plants have been used in daily life to treat various diseases and remedies for health care preparation all over the world as. In fact plants contain a diverse range of bioactive molecules those are a rich source of medicines. Higher plants as source of medicinal compounds have continued to play a dominant role in the maintenance of human health since ancient times (3). The World Health Organization (WHO) has acknowledged that 80% of the world's population, especially in developing countries, depends on traditional medicines derived from plants for primary healthcare [4], as such medicines are regarded to be safe and economic and due to the lack of healthcare facilities people are dependent of traditional practitioners. The WHO has also put more effort towards documenting medicinal plants used by the local people from different parts of the world (5).

In India, there is a group of people known as "Nati vaidya" (a doctor of herbs, compounder of medicinal preparations such as Churna, Pills, Syrup, Asava, Aristha, Taila), their traditional knowledge, native beliefs, skills, and cultural practices concerned with people's health are useful in curing various diseases (6). Ethnobotany of the Monpa ethnic group at Arunachal Pradesh (7). Traditional medicinal plants among rural women of the Garhwal Himalayas, Uttarakhand (8) ,Traditional usage of ethno medicinal plants of Sikandara Hill range, Himachal Pradesh (9), Indigenous knowledge of medicinal plants used by Saperas community, Haryana (10), Documentation and quantitative analysis of local knowledge on medicinal plants (11). Ethno medicinal plants used for treatment of Jaundice and diabetes among the villagers of Sivgangai, Tamil Nadu (12).

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Negligible amount of works have been carried out on the ethnobotanical aspects in the Hyderabad Karnataka region *viz.,* Survey of medicinal plants of different rural and forest areas of Bidar district and prepared a data of folk practitioners for the treatment of skin diseases(13). Documentation of 13 plants belonging to 10 families are extensively used to treat kidney stone and urinary tract infections (14). Similarly, documentation of medicinal plants used by people of Shahapur of Hyderabad Karnataka regions have been studied (15).

Available literature indicates that the Ethnobotanical studies of Kalaburagi districts are not adequately studied as compared to the other districts of Karnataka and India. However, there have been no records available with regards to ethnobotanical studies on Chittapur taluk. Hence an attempt has been made to conduct ethnobotanical studies and document traditional knowledge. In the purview of Biological Diversity Act 2002, where it is aimed to Prepare of People Biodiversity Register at village level.

2. Materials and methods

2.1. Study Area

Chitapur is a Taluk in Gulbarga District of Kalyana Karnataka State, India. It is located 42 km towards East from District head quarters Gulbarga [Figure1.]. Located at 17.12°N 77.08°E. It has an average elevation of 403 msl (1322 ft). (**GIS map**) area is blessed with tributary Kagina.

2.2. Survey and field visit

The Present paper is outcome of frequent field trips for the documentation of ethno-Botanical knowledge during 2018-19. During the field visit met with senior personalities and traditional practitioners [Figure 2.] , covering 24 villages of 05 Gram Panchayats. Population of 26,974. Males constitute 50% of the population and females 50%. average literacy rate of 46%, lower than the national average of 59.5%; with male literacy of 54% and female literacy of 38%. 16% of the population is under 6 years of age.

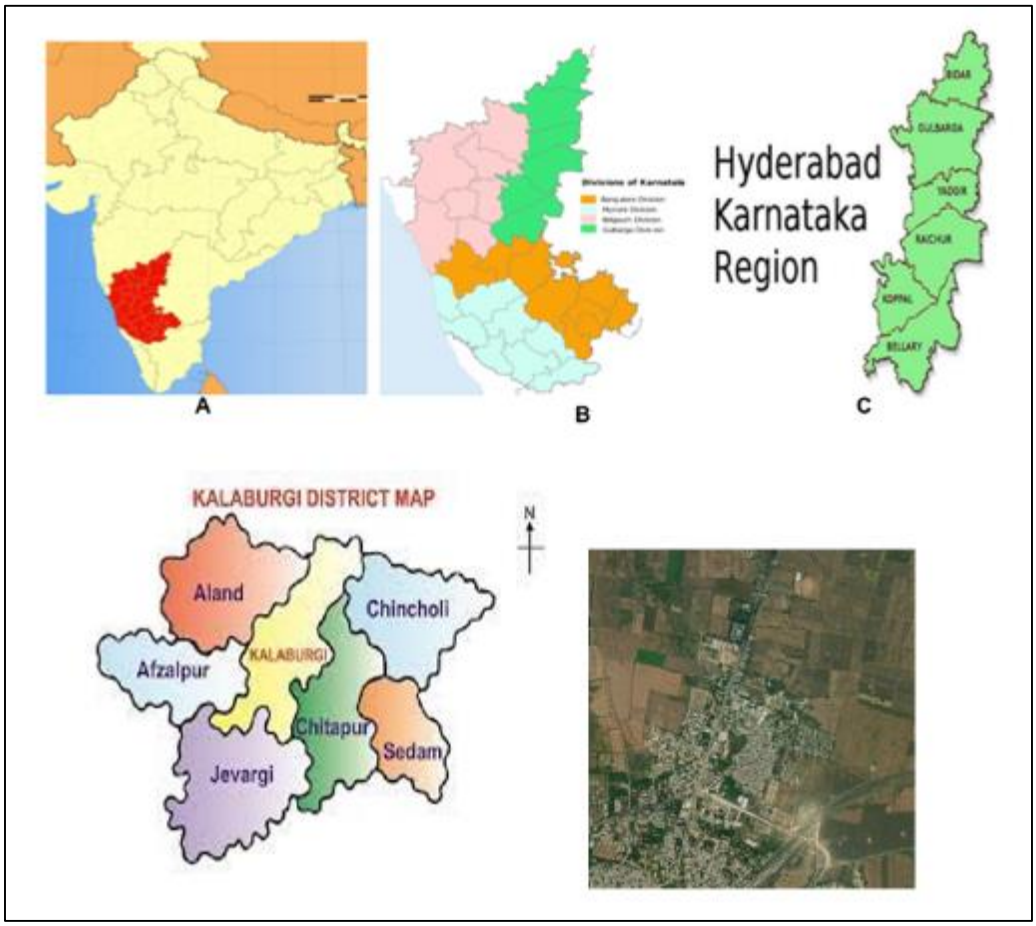

Figure 1. Location map of Study Area

The information collected from 30 different practitioners in detailed standard formats (Plate-1). The interviews were conducted in the local languages 'Kannada', tribal (lambani) by adopting (16) methods. Plants were identified by using the flora such as "Flora of Gulbarga District" (17) "Flora of presidency of Madras" (18) and the and raw materials have been authenticated by various resources and prepared the herbaria. The voucher specimens are deposited at Herbarium Government College, Kalaburagi (GCHK).

3. Results and Discussion

The enumeration and utilization of these are described in Table 1 [Figure 3]. The present study revealed the use of 25 species of plants for the treatment of various diseases. Among them 5 used for Gynecological problems, 3 used for jaundice, 3 used for Stomach ache, 3 used for Tooth ache, 2 for fits 2 for snake bite, similar work reported by (19), remaining plants were used for Elephantiasis, Renal calculus, cough, Bronchitis, Arthritis and Hemorrhoids. In the present *Nigella sativa* is used for fits where as (20) reported 22 different plants used for fits and epilepsy apart from *Nigella sativa.*Traditional uses of medicinal plants of Pakistan (21). Ethnobotanical Studies of Himachal Pradesh (22).

Figure 2 Traditional practitioners of Chittapur Taluk

The present study explored Fabaceae and Euphorbiaceae with 4 species each were found to be dominant families followed by Asclepiadaceae with 3 species, Amaranthaceae, Apocynaceae and Solanceae consisting of 2 species each where as 8 families were monospecific (Fig 4). Most of these plants are commonly available in the surrounding area and

a few plant materials use to obtain from local dealers. Among different parts used for preparing medicine, leaves (7 species; 50%) were largely used, followed by roots (5 species; 20%), Whole plant (4 species ;16%), Seed (3 specie; 12 %) , Fruit (3 species ;12%), Bark (2 species ; 08 %) and Latex (1 species ; 04%) (Fig 5) . Similarly, parts use value, work has carried out by (23). As a highlight the present study *Phyllanthus amarus* used for Jaundice (24) where as no reports available for treatment for Jaundice with *Ricinus communis,* both the plants belongs to Euphorbiaceae.

Table 1 Medicinal plants used by the Nati Vaidiyas of Chitapur Taluk, Kalaburgi

Sl.No	Botanical Name	Family	Part used	Local Name	Ailment Category	Preparation	Application
1	*Abutilon indicum* (L.) Sweet	Malvaceae	Leaf	Mudre	Jaundice	Juice	Oral
2	*Abrus precatorius* L.	Fabaceae	Seed	Gulaganji	Stomach ache	Powder	Oral
3	*Acalypa indica* L.	Eupborbiaceae	Whole Plant	Koppe	Bronchitis	Juice	Oral
4	*Accaia chunda* (Rottler) Willd	Fabaceae	Fruit	Kempu jaali	Cough	Raw pulp	Oral
5	*Achryanthes aspera* L.	Amarantthaceae	Leaf	Uttarani	Tooth ache	Paste	Tropical
6	*Andrographis paniculata* (Burm f) Wall. Ex. Nees.	Acanthaceae	Leaf	Nilavaembu	Snake bite	Decoction	Oral
7	*Aristolochia indica* L.	Aristolochiaceae	Root	Eshwari	Menorrhagia	Decoction	Oral
8	*Azadirachta indica A. Juss*	Meliaceae	Bark	Bavinamara	Leucorrhoea	Decoction	Oral
9	*Balanites aegyptiaca* Del	Zygophyllaceae	Fruit	Ingal kaee	Jaundice	Raw pulp	Oral
10	*Bauhinia variegate* L.	Fabaceae	Bark	Kanchuvaala	Menorrhagia	Decoction	Oral
11	*Boerhaavia diffusa* L	Nyctaginaceae	Whole Plant	Adkaputtana Gida	Leucorrhoea	Decoction	Oral
12	*Caesalpinia boduc* (L.) Roxb	Fabaceae	Seeds	Gajaga	Anti-sterility	Powder	Oral
13	*Coccinia grandis* (L.) Voigt.	Cucubitaceae	Leaves	Tonde	Elephantesis	Paste	Tropical
14	*Gymnema sylvestre* (Retz.) R. Br.	Asclepiadaceae	Root	Madhunashini	Snake bite	Juice	Oral
15	*Hemidesmus indicus* (L.) Schult.	Asclepiadaceae	Root	Anantamula	Snake bite	Powder	Oral
16	*Jatropha gossypifolia* L.	Euphorbiaceae	Latex	Chikka kada haralu	Eye infection	Latex	Tropical
17	*Nerium indicum* Mill. Gard.	Apocynaceae	Root	Kanagile	Snake bite	Paste	Tropical
18	*Nigella sativa* Linn.	Ranunculaceae	Seeds	Krishna jeerige	Epilepsy	Powder	Oral
19	*Phyllanthus amarus* Schum. & Thonn	Eupborbiaceae	Whole Plant	Nelanelli,	Jaundice	Juice	Oral
20	*Pergularia daemia* (Forsk.) Chiov.)	Asclepiadaceae	Leaf	Talavaarana balli	Haemorrhoids	Jiuce	Oral
21	*Ricinus communis* L.	Eupborbiaceae	Leaf	Auḍala	Jaundice	Decoction	Oral
22	*Solanum nigrum L.*	Solanaceae	Root	Kakmunchi	Whooping cough	Juice	Oral
23	*Solanum xanthocarpum Schrad & Wendl.*	Solanaceae	Whole Plant	Kantakari	Stomach ache	Decoction	Oral

24	*Tribulus terrestris L*	Zygophyllaceae	Fruit	Neggilu	Renal Calculus	Powder	Oral
25	*Wrightia tinctoria* R. Br.	Apocynaceae	Leaf	Ajamara .	Tooth ache	Paste	Tropical

Figure 3 Plants used by the Nati Vaidiyas of Chitapur ,Kalaburgi

Taking the medicine as infusion either with water, milk or honey is the major mode of treatment for the diseases. As per the population density of the study area data reveal that 1-3% of the people are engaged in the Traditional Medicinal Practice, 4:1 male female ratio.

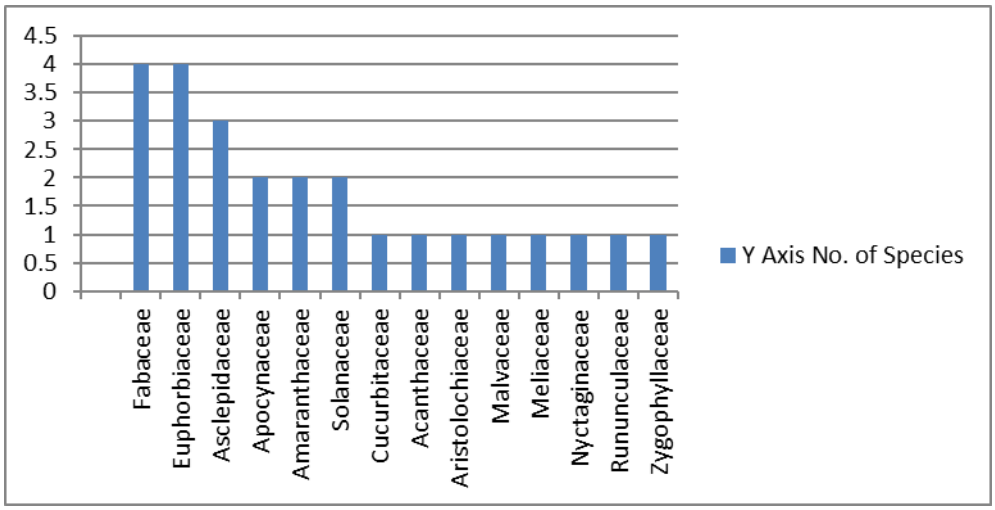

Figure 4 Number of Families and Species used for the preparation of medicine

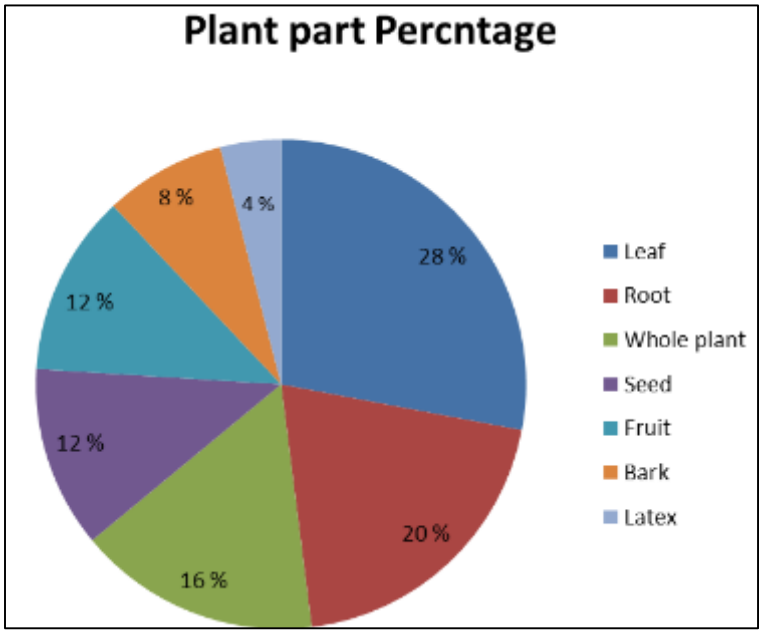

Figure 5 Plant parts (%) used for the preparation of medicine

4. Conclusion

A study on medicinal plant utilization in area revealed that the communities commonly use medicinal plants for maintaining their primary healthcare. The traditional knowledge system in India is fast disappearing. So there is an urgent need for inventorying tribes with a rich cultural heritage. These ethno medicinal data may provide a base to start the search for the new compounds related to Phytochemistry, Pharmacology and Pharmacognosy, and the potent anti–microbial activity should be studied. This may provide new sources of herbal drugs and help to understand the molecular basis of their activities. It is also evident that few plants are holds good for potent medicinal plants in the present study. Further, concerned that over exploitation of these species in the name of medicine may lead to become extinct in future. Therefore, attention should also be made on proper exploitation and utilization.

Compliance with ethical standards

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Disclosure of conflict of interest

No conflict of interest to be disclosed.

Author contribution

All the authors contributed equally to the collection of ethnomedicinal data and writing of the manuscript.

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